

ADDENDUM

TO

NATURAL EVENTS ACTION PLAN (NEAP)
FOR PM10 EXCEEDANCES DUE TO HIGH WIND EVENTS
IN DOÑA ANA COUNTY

Air Quality Bureau
New Mexico Environment Department
P.O. Box 26110
Santa Fe, NM 87502

April 3, 1998

INTRODUCTION

On May 30, 1996, the Environmental Protection Agency (EPA) issued the Natural Events Policy in a memorandum from Mary D. Nichols, Assistant Administrator for Air and Radiation. In this memorandum, EPA announced its new policy for protecting public health when the National Ambient Air Quality Standards (NAAQS) for PM10 (particulate matter less than 10 microns in diameter) are violated due to natural events. The policy sets forth requirements that must be met in order for EPA to exclude exceedances of the standard due to natural events from determinations of attainment status.

In Doña Ana County, New Mexico, numerous exceedances of the 24-hr NAAQS concentration limit for PM10 were recorded during 1994-1997 by monitors operated by the Air Quality Bureau (AQB) of the New Mexico Environment Department (NMED). Because the number of days with exceedances was more than the number allowed by the standard, the county is in violation of the PM10 NAAQS. The Air Quality Bureau's analysis of wind data and other information regarding conditions during the exceedances indicated that all but a few were caused by high winds, which lift and carry dust from areas of exposed dry soil. Since high wind events are a type of natural event covered by the Natural Events Policy, the NMED/AQB is seeking to fulfill requirements set forth in the policy.

One requirement of the Natural Events Policy is that the state air quality agency must submit a Natural Events Action Plan (NEAP) to EPA by November 30, 1997. The NMED/AQB submitted to EPA Region VI a Natural Events Action Plan for Doña Ana County dated November 25, 1997. EPA Region VI evaluated the Doña Ana County NEAP and indicated, in a letter dated February 23, 1998, that additional information should be provided by NMED/AQB in order to finalize a comprehensive plan. The purpose of this Addendum is to provide the additional information requested by EPA Region VI.

NEAP ELEMENTS

Following is a list of the five required elements of the Natural Events Action Plan, and the New Mexico commitments in regard to each element. The Discussion sections describe progress to date and anticipated future steps in development and implementation of the NEAP.

Element 1. Establish public notification and education programs.

New Mexico Commitment: New Mexico will establish public notification and education programs by year end 1998.

Discussion

These programs will inform the public that exceedances of federal health standards have occurred and that such exceedances have adverse health effects, particularly for susceptible individuals. Educational programs will also explain the health advisories (see #2 below) and will recommend precautions to be taken when dust levels are high.

A Health Issues Working Group has been convened to develop proposals for public education materials and programs. This group was co-convened by representatives of the Environment Department and the Health Department's District Office located in Las Cruces. The group includes representatives of local government, locally-based Health Department staff with expertise in public health education, key local health care providers including school nurses, and a public health advocacy group (see attached list of members).

The task of this working group is to develop draft educational materials (e.g., brochures) and proposals for outreach programs. NMED intends to present these drafts and proposals to the public at large for review and comment. NMED intends to make special efforts to seek and incorporate suggestions from those who would most need to receive the information (i.e., susceptible population segments) and those, such as teachers and nurses, who would be most directly involved in taking precautionary actions or communicating the information.

Information about PM10 health effects, measured exceedances, and the Natural Events Action Plan will be disseminated through a variety of media. Media suggested by the working group include brochures, public service announcements, press releases (preceded by direct outreach to news outlets), and various Internet web sites, including those of the Environment Dept., State Climatologist, and local governments. The working group will explore the feasibility of using these media and present its proposals to a wider group of stakeholders and the general public for review and comment.

To fulfill EPA grant commitments, the Environment Department currently issues press releases listing the PM10 exceedances for the previous quarter. This information has not been published by the local news media. NMED therefore intends to make a greater effort to contact and educate the local media and to write NEAP-related press releases that will be more likely to be published. NMED intends to seek the cooperation of local media in publishing of previous day(s) Pollutant Standard Index (PSI) levels for PM10, as a means of heightening public awareness of the problem.

Element 2. Minimize public exposure to high concentrations of PM10 due to future natural events.

New Mexico Commitment: By year end 1998, New Mexico will establish a system to enable susceptible individuals and their caretakers to minimize their exposure to high concentrations of PM10 during dust episodes .

Discussion

EPA's Natural Events Policy states that advisories should inform the public that a dust episode is imminent, or currently taking place, or likely to occur. The working group on health issues has questioned both the feasibility and effectiveness of warnings of imminent or ongoing dust episodes, which would be based on either weather forecasts or real-time measurements. The working group noted that dust storms, unlike for example elevated levels of carbon monoxide, are readily observable by the public. The group therefore suggested an alternative, common-sense

approach based largely on public education. The public education campaign would include the following information:

- (1) episodes of unhealthful dust levels are likely to occur in this area, especially during the windy season of late winter and early spring;
- (2) individuals should take precautionary measures when they see that a dust storm is in progress;
- (3) precautionary measures include staying indoors with windows closed and avoiding outdoor exercise and activities during dust storms;
- (4) individuals who wish to become better able to distinguish unhealthful levels of dust may consult the previous day(s) PSI values for PM10, as published in the media, and compare this with their perception of dustiness.

The working group investigated and rejected two other options: 1) issuance of advance warnings of dust episodes based on the National Weather Service's issuance of high wind advisories or high wind warnings, as is done in Clark Co., Nevada, and 2) basing advisories on real-time data from continuous dust monitors. The group rejected these options because such warnings or advisories would often be in error, resulting in loss of credibility for the entire education program and failure of individuals to take precautions to protect health.

The consensus of the working group was that most people, in deciding whether they should take precautions, would base their actions on their direct observations of dustiness and would discount any official advisory (or absence of same) if it was contradicted by their observations. A public education campaign was recommended as a means of heightening awareness of the health hazards of high dust levels and informing susceptible individuals and their caregivers what precautions they should take when dust levels are high.

The working group proposed that the public education campaign should consist of the following elements:

- a) a brochure, in English and Spanish, explaining the health hazards of high dust levels and describing ways to reduce one's exposure (attached is a draft version currently in review) ;
- b) a dust health advisory to be published monthly during the spring windy season as a paid advertisement in the Las Cruces daily newspaper;
- c) publication of PSI levels for PM10 in the news media; such publication would not only heighten awareness generally, but would help susceptible individuals and their caregivers in "calibrating" their visual observations of dustiness so that they could better distinguish unhealthful levels.

NMED is currently investigating the feasibility of various methods for distributing this information to the public. One possible method, which has been used successfully for other health advisories, is by inserts in electric utility bills. NMED will also seek the cooperation of local chapters of the American Association of Retired Persons in distributing brochures to the elderly. Public and private school administrators will be asked to distribute these materials to their staff,

parents and pupils. The working group suggested that public meetings to address the health issues be held in each of the three public school districts.

Element 3. Abate or minimize appropriate contributing controllable sources of PM10.

New Mexico Commitment: Best Available Control Measures (BACM) will be implemented on appropriate anthropogenic sources by May 30, 1999.

Discussion

NMED is in the process of forming a Sources and Controls Working Group to address the issues of identifying human-caused sources and determining Best Available Control Measures for such sources. The group will consist of planning staff from the local governments, technical experts in civil engineering and wind erosion, and representatives from the construction industry and agriculture. NMED anticipates that the first meeting of the group will be in April 1998, and the work of the group will be largely complete by late Fall 1998.

The first task for the group will be to identify human-caused sources that contribute significantly to exceedances. Staff of the City of Las Cruces Planning Department are nearing completion of a preliminary inventory of fugitive dust emissions for the entire county. For this inventory, emissions are being calculated using formulas given by EPA guidance in AP-42 and other EPA publications. NMED intends to propose that the group consider using either of two alternative approaches to AP-42 methodology:

- a) develop an emissions estimation procedure based on current scientific understanding of dust entrainment during high wind events, or
- b) develop a common-sense approach, based on considerations of source intensity and proximity to populated areas, for identifying sources most in need of controls.

The next task for this work group will be to identify candidate control measures and to evaluate the feasibility and probable effectiveness of these measures.

For sources on public land, implementation of control measures will be through agreements with the appropriate land management entity. NMED prefers that control measures for sources on private land be implemented by passage and enforcement of local ordinances. The City of Las Cruces has compiled a review of current and pending policies and regulations relating to dust control (see attached). This review identifies potential means for implementing new dust control measures within the City. For the West Mesa Industrial Park, another means of implementing control measures is through existing protective covenants (see attached) drawn up by the City of Las Cruces. NMED will encourage and assist local governments in drafting appropriate ordinances. NMED anticipates that by January 1999 we will have evaluated whether local ordinances are sufficient, and will bring the state Environmental Improvement Board for adoption any state regulations needed to fill gaps in implementation by local ordinance.

Element 4. Identify, study and implement practical mitigating measures as necessary, for anthropogenic sources for which BACM are not defined.

New Mexico Commitment: New Mexico will arrange for investigations of new emissions reduction techniques for anthropogenic sources for which BACM are not defined.

Discussion

As described in #3 above, the Sources and Controls Working Group will evaluate the feasibility and effectiveness of candidate control measures for dust emissions from anthropogenic sources. This group will determine if there are any sources for which BACM are not defined. In accordance with the Natural Events Policy, implementation of control measures will be as expeditious as practicable for sources for which BACM are undefined.

NMED and local stakeholders have tentatively identified two kinds of problems where additional studies may be needed. Both problems involve potential conflicts between commonly used methods of dust control and other environmental and health considerations.

(1) Weed Control: In this area, a common method of controlling weeds on vacant land is repeated mechanical disturbance of the soil by some sort of scraper. This prevents growth of a protective vegetation cover and destroys soil surface crusts, thus creating a surface likely to have a high emission rate and low wind threshold. Establishment of vegetation cover on such areas could have a net adverse effect on the health of asthmatics by creating sources of weed or grass pollen. Extensive herbicide use may have adverse environmental effects. Therefore, there may be a need to investigate alternative methods of weed control.

(2) Water Conservation: Many common methods of dust control require water use, either as a direct means of preventing dust entrainment or to support vegetation cover. However, increasing demands upon a limited water supply have prompted local governments to take measures encouraging local users to minimize their consumption of water. Efforts to identify dust control measures that use little or no water may be needed.

Element 5. Periodically reevaluate the conditions causing violations of a PM10 NAAQS, the status of NEAP implementation, and the adequacy of the actions implemented at least every five years.

New Mexico Commitment: New Mexico will perform such reevaluation by November 30, 2002.

Discussion

NMED's intention is to monitor progress in implementation throughout the next several years.

STAKEHOLDER INVOLVEMENT

EPA's Natural Events Policy states that the NEAP should be developed by the State air pollution control agency in conjunction with the stakeholders affected by the plan. The NMED strongly emphasizes stakeholder involvement in development and implementation of the NEAP. Following is a description of NMED's efforts to involve stakeholders in designing and carrying out the plan.

The NMED has presented briefings on the PM10 problems in this county and on the NEAP to a number of stakeholders. Initially, emphasis has been given to bringing this issue before local policymakers. To date, the following groups have received briefings:

- 1) January 6, 1998 New Mexico Metropolitan Planning Organizations
- 2) February 6, 1998 South Central Council of Governments
- 3) March 4, 1998 Las Cruces Homebuilders Association
- 4) March 11, 1998 Las Cruces Metropolitan Planning Organization, Planning Committee (includes elected officials from City of Las Cruces, Town of Mesilla, and Doña Ana County)
- 5) March 23, 1998 City Council of Las Cruces, work session (briefing by City Planning Staff)

Doña Ana County, the City of Las Cruces, and the Town of Mesilla have endorsed and committed to participation in the NEAP process (see attachments). As described above, staff of these local governments have actively participated in the development of proposals by the Health Issues Working Group. In addition, City of Las Cruces staff completed the preliminary emissions inventory. NMED intends to seek support from other municipal governments within the county, although their level of participation may be limited because they lack the staff resources of the county and of Las Cruces.

NMED intends to take the initiative in communicating NEAP-related information to interested parties and in seeking their input. To this end, NMED is continuing efforts to actively seek representatives of a wide variety of stakeholder groups for inclusion in the distribution list for NEAP-related information. NMED will continue to add to this list as other interested parties are identified. NMED envisions that materials to be sent could include periodic newsletter-like updates on NEAP-related matters, including recent exceedances, proposed education materials, results of studies, and the Air Quality Bureau's report on air quality in the state (*New Mexico Air Quality, 1994-1996* — see attached), which includes information on PM10 exceedances and the NEAP. Many stakeholders and interested parties on our distribution list have already been sent the NEAP submittal dated Nov. 25, 1997, with its Attachments 1 and 2.

ATTACHMENTS

1. Members, Advisory Committee on Health Issues
2. Abstract, "Association of Ambient Air Quality and Acute Respiratory Pediatric Morbidity: A Binational Effort on the U.S. Mexico Border", by J. VanDerslice *et al.*
3. Draft Brochure: "Dust Storms: What Everyone Should Know"
4. Letter L-98-145, from David Carpenter (Las Cruces City Planning) to Brad Musick (New Mexico Air Quality Bureau)
5. Las Cruces City Council Resolution No. 98-294
6. Letter dated March 19, 1998, from Fernando Macias (County Manager, Doña Ana County) to Brad Musick (New Mexico Air Quality Bureau)
7. Letter dated March 23, 1998, from Michael Cadena (Mayor, Town of Mesilla) to Brad Musick (New Mexico Air Quality Bureau)